

What is claimed is:

1. A thermally controlled apparatus for lining a semiconductor processing chamber comprising:
- 5 a base;  
an inner wall connected to the base; and,  
a passage disposed in the base, the inner wall or the base and the inner wall, the passage having an inlet and outlet.
- 10 2. The apparatus of claim 1 further comprising an outer wall connected to the base.
3. The apparatus of claim 2 wherein the outer wall further  
15 comprises a pumping port.
4. The apparatus of claim 1 wherein the inner wall further comprises a magnet disposed in the inner wall.
- 20 5. The apparatus of claim 1 wherein the base is comprised of a material selected from the group of aluminum, ceramic and stainless steel.
6. The apparatus of claim 1 further comprising:
- 25 a first and second boss projecting from the base, the first boss comprising a hole in fluid communication with the passage at the inlet, and the second boss comprising a hole in fluid communication with the passage at the outlet.
- 30 7. A thermally controlled apparatus for lining a semiconductor processing chamber comprising:
- a center member;  
a flange circumscribing the center member;  
a cylindrical wall projecting from the center member  
35 inside of the flange; and  
a passage disposed in the center member having an inlet and an outlet.

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8. The apparatus of claim 7 further comprising:

a lid disposed opposite the cylindrical wall, the lid and the wall defining a plenum at least partially therebetween.

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9. The apparatus of claim 8 wherein the center member further comprises:

a plurality of nozzles disposed in the center member providing fluid access to the plenum.

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10. The apparatus of claim 8 further comprising:

a gas feedthrough fluidly coupled to the plenum through a hole disposed in the lid.

15 11. A semiconductor processing chamber comprising:

a wall, a bottom and a lid assembly defining a chamber volume;

a substrate support disposed within the chamber volume;

and,

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a chamber liner disposed in the chamber volume, the chamber liner having a passage at least partially disposed therein, the passage having an inlet and outlet adapted to flow a fluid through the passage.

25 12. The chamber of claim 11 wherein the chamber liner further comprises at least one of:

a first liner disposed proximate the lid assembly; or

a second liner disposed about the substrate support.

30 13. The chamber of claim 11 wherein the chamber liner is retained in the chamber by a clamp affixed to the chamber.

14. The chamber of claim 11 wherein the chamber liner is comprised of a thermally conductive material.

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15. The chamber of claim 11 wherein the chamber liner is comprised of a material selected from the group of aluminum, ceramic and stainless steel.

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16. The apparatus of claim 12 wherein the second liner further comprises:

- 5 a base having the passage disposed within; and  
an inner wall connected to the base.

17. The apparatus of claim 16 wherein the second liner further comprises:

- 10 an outer wall connected to the base.

18. The apparatus of claim 16 wherein the second liner further comprises:

- 15 a first and second boss projecting from the base, the first boss comprising a hole in fluid communication with the passage at the inlet, and the second boss comprising a hole in fluid communication with the passage at the outlet.

19. The apparatus of claim 16 wherein inner wall further comprises a magnet disposed in the inner wall.

- 20 20. The apparatus of claim 17 wherein the outer wall further comprises a pumping port.

21. The apparatus of claim 12 wherein the first liner further comprises:

- 25 a center member having the passage disposed within;  
a flange circumscribing the center member; and,  
a cylindrical wall projecting from the center member inside of the flange.

- 30 22. The apparatus of claim 21 further comprising:  
a lid disposed opposite the cylindrical wall, the lid and the wall defining a plenum at least partially therebetween.

- 35 23. The apparatus of claim 22 wherein the center member further comprises:

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a plurality of nozzles disposed in the center member providing fluid access to the plenum.

24. The apparatus of claim 22 further comprising:

- 5 a gas feedthrough fluidly coupled to the plenum through a hole disposed in the lid.

25. Apparatus for lining a semiconductor processing chamber comprising:

- 10 a liner having a plurality of apertures formed at least partially therein; and

a lid having an inlet, the lid disposed proximate the liner and defining a plenum at least partially therebetween.

- 15 26. The apparatus of claim 25 further comprising:

a nozzle disposed in each of the plurality of apertures.

- 20 27. The apparatus of claim 26, wherein the nozzle is comprised of quartz, silicon carbide, silicon, aluminum nitride, aluminum oxide or combinations thereof.

28. The apparatus of claim 26, wherein the liner further comprises:

- 25 a channel having an inlet and an outlet disposed in the liner.

29. A nozzle for providing fluid entry to a processing chamber comprising:

- 30 a mounting portion adapted to be couple to the processing chamber; and

a gas delivery portion, the mounting portion and the gas delivery having one or more passages extending through.

- 35 30. The nozzle of claim 29, wherein one of the one or more passages comprises:

a central passage extending at least partially through the mounting portion; and

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one or more secondary passages disposed in the gas delivery portion fluidly coupling the central passage to the processing chamber.

- 5 31. The nozzle of claim 30, wherein the gas delivery portion further comprises:

a end proximate the mounting portion, wherein an outlet of the one or more secondary passages are disposed at least about 0.25 inches from the end.

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32. The nozzle of claim 30, wherein the secondary passages are directed to deliver gas at an angle relative an end proximate the mounting portion.

- 15 33. The nozzle of claim 32, wherein the angle is about 15 to about 35 degrees.

34. The nozzle of claim 29, wherein one of the one or more secondary passages comprises:

- 20 a central passage extending through the mounting portion and the gas delivery portion; and

one or more secondary passages fluidly coupling the central passage to the processing chamber.

- 25 35. The nozzle of claim 29, wherein the gas delivery portion has a curved distal end.

- 30 36. The nozzle of claim 29, wherein the gas delivery portion and the mounting portion have an oblique orientation.

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